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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,738	09/08/2000	Junji Otani	NV/P-22090/A	3187

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/657,738

Applicant(s)

OTANI ET AL. eb

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. This Office action is in response to applicant's amendment received February 20, 2004, which cancels claims 1-3, 12 and 18-21, and amends claims 7 and 13.

Claims 7 and 13-17 are pending.

2. The terminal disclaimer filed on February 20, 2004, disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,603,020, has been reviewed and is accepted. The terminal disclaimer has been recorded. Accordingly, the obviousness-type double patenting rejection as set forth in the Office action mailed November 19, 2003 is overcome.

3. Most of the issues raised under 35 U.S.C. 112, 2nd paragraph, in the Office action mailed November 19, 2003 are overcome by applicant's amendment. The remaining issue, as modified to reflect the amended claim language, is set forth in this action.

4. The claims remain subject to an election of species. Claims 7 and 13 continue to read on the elected species. Applicant's remarks regarding the ultimate species not reading on claim 7 are noted. The ultimate species reads only on claim 13, but both claims 7 and 13 read on the broader elected species.

Claims 14-17 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 11.

5. The examiner herein modifies the rejection based on the '878 patent to Jost et al. in order to correct her previous erroneous statement that the ninth formula in claim 13 is also within the scope of formula I in claim 7. The language of claim 7 is rather convoluted with definitions of variables containing variables containing further variables, followed by alternative definitions of variables, definitions of additional variables, and provisos. Claim 7 initially defines R₅, R₆ and R₇ as standing for "hydrogen, cyano...", then sets forth an alternative definition in reciting "or R₅, R₆ and R₇...stand for a saturated...", then defines Z, then sets forth a proviso that R₆ and R₇ do not simultaneously stand for hydrogen. The proviso that, in effect, excludes compounds in which Ar₁ and/or Ar₂ represents an unsubstituted naphthyl group from the scope of claim 7 was/is set forth about 25 lines after the initial definition of R₆ and R₇ which allows these variables to represent hydrogen. The examiner appears to have previously misinterpreted the conditions under which the proviso applies. Since the modification is not necessitated by applicant's amendment, the rejection is not made final.

6. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the alternative definition of R₅, R₆ and R₇, which begins twelve lines from the bottom of page 3 of applicant's amendment received February 20, 2004, reference is made to "the C₆-C₂₄-aryl" as being able to be substituted one to three times with C₁-C₈alkyl or C₁-C₈alkoxy. This reference is confusing because the alternative definition of R₅, R₆ and R₇ defines these variables

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as heterocyclic radicals, not as C₆-C₂₄-aryl. The initial definition of R₅, R₆ and R₇ allows these variables to be C₆-C₂₄-aryl which may be substituted one to three times with C₁-C₈alkyl, C₁-C₈-alkoxy, or halogen. Within the initial definition of R₅, R₆ and R₇, possibilities are set forth containing the further variables R₁₂, R₁₃ and R₁₄ which may stand for C₆-C₂₄-aryl. If the reference to "the C₆-C₂₄-aryl" in the alternative definition of R₅, R₆ and R₇, actually refers to C₆-C₂₄-aryl as represented by R₁₂, R₁₃ and R₁₄, then the claim needs to be rewritten so "the C₆-C₂₄-aryl" and accompanying language regarding substitution is set forth within the definition of R₁₂, R₁₃ and R₁₄.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jost et al. (4,585,878).

Jost et al. generically disclose N-substituted diketopyrrolopyrroles encompassing compounds within the scope of present claims 7 and 13. For example, see column 1, line 5-c. 4, l. 68. With respect to R₁ and R₂ in Jost's formula (I), Jost teaches that phenyl or naphthyl which are unsubstituted or which carry substituents that do not confer solubility in water are of particular interest (see c. 4, l. 63-c. 5, l. 40). With respect to R₃ and R₄ in Jost's formula (I),

alkyl groups having 1-12 carbon atoms, and benzyl which may be substituted by halogen or by alkyl groups having 1-12 carbon atoms are among the preferences taught by Jost (see c. 5, l. 41-47). As taught at c. 9, l. 30, Jost's compounds are fluorescent.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make various compounds within the scope of Jost's formula (I) in order to provide compounds useful for Jost's purposes. One of ordinary skill in the art would have reasonably expected that compounds within Jost's formula (I), and particularly those having the preferred groups taught by Jost, would be useful for Jost's purposes. It is the examiner's position that compounds within the scope of present claims 7 and 13 would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention given Jost's disclosure because these compounds have preferred groups taught by Jost.

For example, the first formula in present claim 13 represents a compound of Jost's formula (I) wherein R_1 and R_2 are radicals of formula (III) as shown at c. 5, l. 24-40 wherein R_{23} is a C_1 -alkyl and R_{22} is hydrogen, and R_3 and R_4 are each benzyl substituted by C_1 -alkyl. As another example, the ninth formula in claim 13 represents a compound of Jost's formula (I) wherein R_1 and R_2 are each unsubstituted naphthyl, and R_3 and R_4 are each C_1 -alkyl.

With respect to compounds within the scope of present claim 7, Jost's teaching that R_1 and R_2 in Jost's formula (I) may be naphthyl groups which carry substituents that do not confer solubility in water, and Jost's disclosure of substituents that do not confer solubility in water as being substituents such as halogen atoms, alkyl groups ("particularly preferably 1 to 4, C atoms"; c. 1, l. 54), $-OR_8$, SR_8 , cyano and other groups meeting the limitations of R_6 and R_7 as defined in

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present claim 7, clearly suggest compounds of present formula I wherein each of Ar₁ and Ar₂ stand for a substituted naphthyl group (either of the first two formulae set forth in the definition of Ar₁ and Ar₂ wherein at least one of R₆ and R₇ is other than hydrogen). Jost's teaching that R₃ and R₄ in Jost's formula (I) can be alkyl groups having 1-12 carbon atoms, or benzyl which may be substituted by halogen or by alkyl groups having 1-12 carbon atoms, suggest compounds of present formula I in which each of present R₁ and R₂ represent a substituent such as an alkyl group having 1-12 carbon atoms or -CH₂-phenyl which may be substituted by alkyl or halogen.

9. Applicant's arguments filed February 20, 2004 have been fully considered but they are not persuasive.

With respect to the rejection under 35 U.S.C. 112, 2nd paragraph, applicant argues that the term "aryl" can only refer back to "C₆-C₂₄-aryl", but "C₆-C₂₄-aryl" appears twice in the claim prior to the occurrence questioned by the examiner, neither earlier occurrence is in the alternative definition of R₅, R₆ and R₇, and one earlier occurrence provides a different scope regarding possible substituents for the C₆-C₂₄-aryl, thus leading to confusion as to the scope of the claims.

With respect to the rejection based on the '878 patent to Jost et al., applicant relies on JP-A-2001-257078 as demonstrating that the compounds of the present invention have unexpected properties not recognized or suggested by Jost.

It is the examiner's position that the data set forth in the JP '078 document are insufficient to demonstrate superior/unexpected results of the presently claimed compounds

commensurate in scope with claims 7 and 13 compared to the prior art of Jost et al. for at least the following reasons:

(a) The data pertain to the use of diketopyrrolopyrroles in electroluminescent devices. The property relied upon as demonstrating unexpected superiority over the Jost patent is electroluminescent intensity, which is the intensity of light emitted from a device comprising a layer comprising diketopyrrolopyrrole sandwiched between a pair of electrodes. The present claims are drawn to compounds, not to an electroluminescent device. Jost's compounds are disclosed as fluorescent compounds suitable for uses such as dyeing polymers. The data in JP '078 do not demonstrate that the present compounds have unexpectedly superior properties when used for the purposes taught by Jost et al.

(b) EM5 and EM6 of JP '078 differ from EM8 by more than the replacement of a phenyl (EM8) with a naphthyl (EM5) or a phenanthryl (EM6). Although page 13 of applicant's response indicates that R13 and R14 of EM8 in JP '078 is 4-methylbenzyl, the formula shown for EM8 in the translation provided by applicant shows that R13 and R14 of EM8 is actually only a methyl group.

(c) Present claim 13 encompasses various compounds having substituted phenyl groups instead of a naphthyl group. Even if applicant persuaded the examiner that the data in JP '078 are sufficient to support the patentability of compounds in which Ar₁ and Ar₂ are naphthyl groups, the data would still be insufficient to support the patentability of compounds represented by the first-third, sixth, seventh and tenth-twelfth formulae in claim 13.

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10. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes.
(Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
May 31, 2004



MARIE YAMNITZKY
PRIMARY EXAMINER

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